

## CHAPTER 21



# The Forward Rush

## On Locomotors' Future Focus

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Beethoven took more than 6 years to finish his Ninth Symphony; clearly, he was in no rush to accomplish his goal. In stark contrast, Mozart composed his last three symphonies in less than a month. Unlike Beethoven, Mozart appears to have been preoccupied with moving quickly toward his desired future states (i.e., completing symphonies). These anecdotes vividly exemplify how individuals can differ in their propensity to “rush forward” toward future goals and accomplishments. But what can explain these kinds of differences?

Regulatory mode theory posits two essential regulatory modes: locomotion and assessment (Higgins, 2012; Higgins, Kruglanski, & Pierro, 2003; Kruglanski et al., 2000). The locomotion mode represents the aspect of self-regulation concerned with motion and progress from state to state, whereas the assessment mode is the aspect of self-regulation concerned with critically evaluating goals and means. High locomotors are eager to initiate and maintain goal-driven behavior and dislike any interruptions that stand in their way. High assessors, on the other hand, are focused on carefully selecting both the right goal and the best means to that goal's attainment (Kruglanski et al., 2000). Locomotion is positively related to measures of Type A personality (Bortner, 1969), action (vs. state) orientation (Kuhl, 1985), and achievement orientation (Jackson, 1974); nonetheless, a variety of empirical tests have shown that locomotion is distinct from these constructs (Kruglanski et al., 2000). Similarly, assessment is positively correlated with social anxiety (Leary, 1983), fear of invalidity (Webster & Kruglanski, 1994), and public self-consciousness (Fenigstein, Scheier, & Buss, 1975); however, empirical tests have confirmed its divergent validity from these scales (Kruglanski et al., 2000). Locomotion and assessment are independent: Individuals can be high on one, high on both, or low on both. Prior studies on the two regulatory modes have shown that they can be measured as personality

constructs (via the assessment and locomotion scales; see Table 21.1) or manipulated situationally (e.g., by asking participants to think back to times they acted like a locomotor or an assessor; Avnet & Higgins, 2003; Pierro, Pica, Klein, Kruglanski, & Higgins, 2013; Pierro, Presaghi, Higgins, & Kruglanski, 2009).

Of the two regulatory modes, locomotion in particular<sup>1</sup> is related to a greater attentiveness to and concern for the future (Kruglanski, Pierro, & Higgins, 2015). High locomotors are preoccupied with motion, and motion is typically oriented *forward* (i.e., toward the future). In other words, goal-directed motion generally entails moving from one's current (less desirable) state to a future state that is more desirable (Kruglanski, Jasko, et al., 2015). Locomotors' goal to maximize movement thus implies a focus on the future, where their movement is headed.

**TABLE 21.1. Locomotion and Assessment Regulatory Mode Scales**

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Locomotion

1. I don't mind doing things even if they involve extra effort.
2. When I finish one project, I often wait a while before getting started on a new one. (*Reverse-coded*)
3. I am a "workaholic."
4. I feel excited just before I am about to reach a goal.
5. I enjoy actively doing things, more than just watching and observing.
6. I am a "doer."
7. When I decide to do something, I can't wait to get started.
8. By the time I accomplish a task, I already have the next one in mind.
9. I am a "low energy" person. (*Reverse-coded*)
10. Most of the time my thoughts are occupied with the task I wish to accomplish.
11. When I get started on something, I usually persevere until I finish it.
12. I am a "go-getter."

Assessment

1. I never evaluate my social interactions with others after they occur. (*Reverse-coded*)
  2. I spend a great deal of time taking inventory of my positive and negative characteristics.
  3. I like evaluating other people's plans.
  4. I often critique work done by myself or others.
  5. I often compare myself with other people.
  6. I often feel that I am being evaluated by others.
  7. I am very self-critical and self-conscious about what I am saying.
  8. I rarely analyze the conversations I have had with others after they occur. (*Reverse-coded*)
  9. I am a critical person.
  10. I don't spend much time thinking about ways others could improve themselves. (*Reverse-coded*)
  11. I often think that other people's choices and decisions are wrong.
  12. When I meet a new person I usually evaluate how well he or she is doing on various dimensions (e.g., looks, achievements, social status, clothes).
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<sup>1</sup>Assessment is largely irrelevant to an emphasis on the future, because assessors do not care about time *as such* any more than low assessors do; see Kruglanski, Pierro, and Higgins (2015) for a more detailed discussion of this.

A tendency to focus on the future can be manifested in multiple ways. Perhaps most obviously, it can lead individuals to plan more for the future and think less about the past (in that a past focus does not allow movement). Less obviously but of equal importance, a preoccupation with the future can lead individuals to *initiate* more future goal commitments, because such initiation allows them to maximize their motion toward various desired end states. Similarly, a focus on the future can cause individuals to *maintain* their future goal commitments, because such maintenance enables them to move toward their desired future states quickly and without interruption. In line with this reasoning, the following sections describe the impact of locomotion regulatory mode on individuals' tendencies to plan for the future, focus on the past, initiate future goal commitments, and maintain those commitments (see also Table 21.2).

## LOCOMOTION AND FUTURE PLANNING

Individuals who are focused on the future should both contemplate it and try to make decisions that will benefit their future selves. Thus high locomotors should be more likely to plan for the future, work harder to ensure that their future selves will be provided for, and sacrifice their current desires for better outcomes in the future. Recent research supports these notions.

**TABLE 21.2. Summary of Locomotion Effects**

Future aspect	Effects of locomotion
Planning for the future	<ol style="list-style-type: none"> <li>1. High locomotors are better at time management.</li> <li>2. High locomotors are more likely to accumulate savings for retirement.</li> <li>3. High locomotors get better grades and have higher achievement motivation.</li> <li>4. High locomotors are less impulsive and have more self-control.</li> </ol>
Forgetting the past	<ol style="list-style-type: none"> <li>1. High locomotors experience less regret and less counterfactual thinking.</li> <li>2. High locomotors experience less nostalgia.</li> <li>3. High locomotors are less likely to commit the sunk-cost fallacy.</li> <li>4. High locomotors prefer an individual who is assisting them with current goal attainment over an individual who assisted with past goal attainment.</li> <li>5. High locomotors are more willing to forgive themselves and others.</li> <li>6. High locomotors are more committed to the goal of changing and better able to cope with organizational change.</li> </ol>
Initiation of goal commitment	<ol style="list-style-type: none"> <li>1. High locomotors are more morning-oriented.</li> <li>2. High locomotors procrastinate less.</li> <li>3. High locomotors are more likely to engage in delay discounting.</li> </ol>
Maintenance of goal commitment	<ol style="list-style-type: none"> <li>1. High locomotors prefer goals with high (vs. low) expectancy.</li> <li>2. High locomotors prefer means that serve only one goal (vs. means that serve multiple goals).</li> <li>3. High locomotors invest more time and effort into goal attainment.</li> <li>4. High locomotors finish tasks more quickly and prefer organizational structures that facilitate faster goal completion.</li> <li>5. High locomotors prefer to multitask.</li> </ol>

Locomotion is significantly associated with measures of time management and the amount of control individuals perceive they have over their time. In two samples of students and employees, locomotion was positively related to overall perceived control of time, as measured by a subset of five items taken from the Time Management Behavior Scale (TMBS; Amato, Pierro, Chirumbolo, & Pica, 2014). The TMBS has three other subscales: Setting Goals and Priorities (which measures the tendency to set short- and long-term goals for the future), Mechanics of Time Management (which measures individuals' proclivity to make lists, arrange their schedules in advance, and plan ahead), and Preference for Organization (which measures the overall tendency to organize life and work environments; Macan, Shahani, Dipboye, & Phillips, 1990). In both the university student and employee samples, locomotion was positively and significantly related to each of the three TMBS subscales. Furthermore, the relationship between locomotion and perceived control of time was mediated by the subscale Setting Goals and Priorities, as well as the subscale Preference for Organization (Amato et al., 2014). These studies suggest that locomotors engage more in thinking about and planning for the future and that they experience greater control over their time as a result.

Individuals who are high on locomotion (and moderately high on assessment) are also more likely to accumulate greater savings for retirement. Researchers correlated individuals' locomotion scores with finance information from two national datasets: the HRS, which provides in-depth information on the finances of middle-age and older adults, and the MIDUS2, which provides similar information about wealth for individuals of all ages. Measured locomotion was associated with greater wealth accumulation for retirement when it was paired with a minimum level of assessment (Kim, Franks, & Higgins, 2013). These findings indicate that high (vs. low) locomotors not only spend time thinking about the far future but are also careful to ensure that their future selves will be provided for.

Doing well in school can considerably improve individuals' future prospects in life; consequently, those who are future-oriented should emphasize academic achievement. In this vein, there is a positive relationship between locomotion regulatory mode and academic engagement and achievement in college students. In one study, students' locomotion scores were significantly associated with their academic engagement, as assessed by the student version of the Utrecht Work Engagement Scale (UWES; Zhang & Gheibi, 2015). The UWES measure contains three subscales: Vigor, Dedication, and Absorption (Schaufeli, Salanova, González-Romá, & Bakker, 2002). Locomotion was significantly and positively associated with each of the subscales (Zhang & Gheibi, 2015). In another experiment, higher locomotion predicted higher grade-point averages in college students (for individuals who were also relatively high on assessment; Kruglanski et al., 2000). Locomotion is also significantly positively correlated with achievement motivation, as measured by the Achievement Motivation subscale of Jackson's (1974) Personality Research Form (Kruglanski et al., 2000). Thus, when making decisions in the academic realm, locomotors are likely to select options that will benefit their future selves in the long run.

Lastly, locomotion is negatively associated with impulsivity. In a sample of university students, locomotion exhibited a significant negative correlation with the Barratt Impulsiveness Scale, a common self-report scale of impulsive thoughts and

behaviors (Shalev & Sulkowski, 2009; Spinella, 2007). Similarly, locomotion is positively associated with a measure of self-control (Struk, Scholer, & Danckert, 2015). These findings again attest to high locomotors' tendency to think about future consequences before giving in to momentary temptations.

In summary, activities such as making plans for the future and working to secure a comfortable future are means of ensuring that one is moving effectively toward his or her future goals. Given locomotors' preoccupation with forward motion and their desire to make progress on their goals, it is unsurprising that they are drawn to such future-oriented pursuits.

## **LOCOMOTION AND FORGETTING THE PAST**

The flip side of an emphasis on the future is the propensity to think less about the past. In other words, those who concentrate on the future have less time and energy left over to pay attention to prior events. In accordance with this, individuals who are high on locomotion should be less likely to dwell on the past, make decisions biased by prior occurrences, feel regret at past choices, or hold grudges because of past occurrences. Locomotors should even be less susceptible to positive feelings regarding the past, such as the propensity to think wistfully about past events or to value friends who helped them in the past. Lastly, they should be eager to move on from the past by embracing change and innovation. Extant research offers consistent support for these notions.

Specifically, locomotors experience less regret and engage in less counterfactual thinking or in rumination about "what might have been." In one study, high locomotors who read a vignette with a negative outcome (an unfortunate purchasing decision) generated fewer counterfactuals regarding the scenario and felt that they would experience less regret if they were in the protagonist's place. In another study, participants described their own unfortunate purchasing decisions. Those who were high on locomotion generated fewer counterfactuals about the event; they also reported that they experienced less regret about the decision (Pierro et al., 2008). These studies indicate that those who are high on locomotion are less interested in analyzing the past, given that they spend less time dwelling on the past and thinking about what might have been.

Locomotors are less likely to experience nostalgia, defined as a sentimental longing or wistful affection for the past. In one experiment, participants completed three measures of proneness to nostalgia (Pierro, Pica, et al., 2013). The first was a nostalgia-relevant 3-item subscale of the Time Perspective Inventory, containing items such as "It gives me pleasure to think about my past" (Zimbardo & Boyd, 1999). The second measure was the 5-item Southampton Nostalgia Scale, containing questions such as "Generally speaking, how often do you bring to mind nostalgic experiences?" (Routledge, Arndt, Sedikides, & Wildschut, 2008). The third measure was the Batcho Nostalgia Inventory, in which participants rated the extent to which they missed 18 aspects of their past (e.g., "holidays I went on," "the way society was," and "my childhood toys"; Batcho, 1995). An individual-difference measure of locomotion was negatively associated with each of the nostalgia scales described above (Pierro, Pica, et al., 2013). In a separate study, situationally induced

locomotion produced lower scores on a 3-item measure of state nostalgia, which asked participants to rate their agreement with statements such as “Right now, I am having nostalgic feelings” (Pierro, Pica, et al., 2013; Wildschut, Sedikides, Arndt, & Routledge, 2006). It appears, then, that locomotors are less inclined to think either negatively (i.e., with regret) or positively (i.e., with nostalgia) about the past.

An intriguing consequence of locomotors’ lesser attachment to the past is their lower susceptibility to the sunk-cost fallacy. This fallacy is a decision-making bias that leads individuals to be unduly influenced by an unrecoverable past investment of money, even when ignoring the prior investment would lead to an objectively better outcome. In three studies, participants read a sunk-cost scenario such as the following:

“As the president of an airline company, you have invested 10 million dollars of the company’s money into a research project. The purpose was to build a plane that would not be detected by conventional radar, in other words, a radar-blank plane. When the project is 90% completed, another firm begins marketing a plane that cannot be detected by radar. Also, it is apparent that their plane is much faster and far more economical than the plane your company is building. The question is: Should you invest the last 10% of the research funds to finish your radar-blank plane?”

In all three studies, both measured and manipulated high locomotion led individuals to invest less money after reading a sunk-cost scenario (Amato, Chernikova, Pierro, Kruglanski, & Higgins, 2016). The fact that locomotors are less bound by previous decisions suggests that they put greater emphasis on their current and future choices.

Because they are more interested in the pursuit of future goals than in goals that have already been completed, high locomotors exhibit greater preference for individuals who serve as means to current (vs. past) goal attainments. In one study, college students were asked to list a friend who had helped them attain a goal in the past semester, as well as a friend who was helpful to attaining a future goal. High locomotors exhibited more positive affect toward a friend who was currently helping them as compared with the friend who was helpful in the past (Orehek, Fitzsimons, & Kruglanski, 2014). When high locomotors were experimentally induced to believe that they needed to make further progress on a goal, they felt more positively toward a friend helpful to that goal’s attainment as compared with when they believed that they had already made enough progress on that goal (Orehek et al., 2014). These results offer evidence that individuals who are high on locomotion quickly forget those who helped them with past goal attainment and focus their attention only on those who are likely to be helpful to current or future goal attainment.

Due to their lesser propensity to dwell on the past, individuals who are high on locomotion are more willing to forgive themselves for past misdeeds. When participants were asked to recall a past experience when they had wronged someone else, those who were high on locomotion reported greater self-forgiveness regarding the situation (measured by the extent to which they felt accepting of themselves, forgiving of themselves, disliking of themselves [reverse-scored], and rejecting of



themselves [reverse-scored]; Pierro, Pica, Kruglanski, and Higgins, 2014). High locomotion was also related to fast response times to self-forgiveness-related words in an adapted version of the Brief Implicit Association Test (Sriram & Greenwald, 2009), which indicates that self-forgiveness-related words are more accessible for locomotors (Pierro et al., 2014). In another study, a focus on the future was shown to play a mediating role in the relationship between locomotion and self-forgiveness: Locomotion was positively related to future focus (as measured by the Temporal Focus Scale; Shipp, Edwards, & Lambert, 2009), and future focus in turn predicted greater self-forgiveness (Pierro et al., 2014). These studies suggest that high locomotors are more willing to let go of the past by forgetting and forgiving any wrongs they have committed against others. In addition, they demonstrate that the mechanism underlying locomotors' tendency to forgive past wrongs is their greater focus on the future.

Importantly, individuals who are high on locomotion are also more forgiving of *others* who have wronged them. After reading a scenario involving a conflict with a friend, high locomotors reported a greater desire to reconcile with that friend (measured with items such as "I am motivated to reconcile with my partner") and felt less lingering unpleasantness regarding the conflict (measured with items such as "I have negative feelings as a result of this conflict"; Webb, 2012). This finding indicates that in their quest to move on from the past as quickly as possible, locomotors are quick not only to forgive their own wrongs but others' wrongs against them as well.

Lastly, high locomotors are more willing to accept and embrace change, which involves moving from a past state to a new (and potentially better) future state. Locomotion was positively correlated with a 5-item scale of commitment to change (Scholer & Higgins, 2012). The scale captures several elements of commitment to the goal of change: the determination to persist in changing, the intention to devote effort to change, and an unwillingness to abandon the pursuit of change (Klein, Wesson, Hollenbeck, Wright, & DeShon, 2001). It contains items such as "I am strongly committed to pursuing this goal [of change]." Locomotion scores also significantly predicted the likelihood of participants' wanting to switch from an old to a new experimental task. Participants spent 12 minutes alternating between two tasks: a fun task (playing a puzzle game that involves moving gems around on a screen) and a tedious task (counting X's and O's in a 40 × 40 grid). They were then given the option of either continuing to work on this combination of tasks or trying a new combination of tasks. High locomotors were more likely to try the new combination of tasks (Scholer & Higgins, 2012). In addition, individuals' locomotion orientation predicted the degree to which they experienced change as a positive event (measured by items such as: "Indicate the extent to which change in general is unpleasant/pleasant"; Scholer & Higgins, 2012). These studies show that a high locomotion orientation leads individuals to prefer change and progress over remaining stuck in the past.

Along the same lines, nurses who were high (vs. low) in locomotion were better able to cope with drastic changes in their professional roles on the job, as measured by a 12-item scale of coping with organizational change (Judge, Higgins, Thoresen, & Barrick, 1999; Kruglanski, Pierro, Higgins, & Capozza, 2007). Workers for the Italian Postal Service who were high in locomotion were more successful at adapting

to far-reaching changes in the organization, which included downsizing, personnel reduction, and newly available incentives for transferring to alternative roles (Kruglanski, Pierro, Higgins, & Capozza, 2007). Similarly, workers for the Municipal City of Rome who were high in locomotion were better able to tolerate sweeping organizational reforms, which included a reorganization of incentive systems and the integration of various sectors (Kruglanski, Pierro, Higgins, & Capozza, 2007). Again, these results demonstrate that locomotors are willing and able to embrace change as a way of moving away from the past.

In short, the findings above suggest that locomotion-oriented individuals are generally uninterested in thinking about or lingering over the past. As the past is unchangeable, brooding over it forces one to stay in the same state, dwelling on the same things over and over again. Given their desire for swift forward motion, high locomotors are unsatisfied with such stasis; rather, they choose to move on from the past with impatient celerity, eagerly embracing novelty, change, and the future.

### **LOCOMOTION AND INITIATION OF GOAL COMMITMENT**

Because locomotors enjoy moving toward desired future states, they should be more likely to initiate goal commitments, as these allow them to maximize such motion. Therefore, locomotors should prefer to begin their daily tasks as early as possible, avoid procrastination, and select goals that can be initiated immediately. Evidence in support of these claims can be found in multiple domains.

Rather than taking their time and sleeping in in the mornings, locomotors prefer to start their days early. In one study, participants were asked to respond to a morningness–eveningness scale, which included items such as “One hears about morning and evening types of people; which one of these types do you consider yourself to be?” (Smith, Reilly, & Midkiff, 1989). Individuals with a strong locomotion orientation were more likely to report being morning-oriented than evening-oriented (Pica, Amato, Pierro, & Kruglanski, 2015). These results suggest that one consequence of locomotors’ preference for swift progress toward their future state is their desire to wake up as early as they can.

Individuals who are high on locomotion also avoid procrastinating on goals and tasks, preferring instead to start moving as soon as possible. Locomotion was negatively correlated with scores on the Tuckman Procrastination Scale (Tuckman, 1991), which measures the tendency to delay task initiation or completion using items such as “When I have a deadline, I wait until the last minute” (Pierro, Giacomantonio, Pica, Kruglanski, & Higgins, 2011). When insurance workers were asked to set three job-related goals for themselves for the following 3 months, locomotion was negatively associated with their actual procrastination on those goals, as measured 3 months later with the question “To what extent has the fulfillment of the goals [you listed] been postponed?” (Pierro et al., 2011). High locomotors also reported that they generally did not procrastinate when taking exams. In addition, locomotors were also less likely to actually postpone an upcoming exam they planned to take; this was mediated by their greater propensity to avoid distractions and focus on the task at hand (Pierro et al., 2011). Again, these results confirm the notion that locomotors do not like to sit still and do nothing; rather, they are constantly initiating motion toward their desired future states.



Finally, locomotion is positively correlated with delay discounting, or the tendency to prefer small but immediate rewards to larger but delayed rewards. When individuals had to make a series of hypothetical choices between smaller rewards they could obtain right away and larger rewards they would have to wait between 7 and 120 days for, locomotion was positively associated with the tendency to select the smaller but immediate rewards (Guo & Feng, 2015). This suggests that locomotors prefer to set goals (i.e., getting a candy bar) that can be initiated immediately, rather than goals that may require a delay.

To summarize, initiating goals and tasks offers individuals the opportunity to engage in immediate movement, because the beginning of a new project will generally require prompt activity and effort. This perfectly suits locomotion-oriented individuals' desire for brisk, future-oriented action. As a result, as can be seen above, locomotors are more likely to initiate new projects and goals.

## LOCOMOTION AND MAINTENANCE OF GOAL COMMITMENT

High locomotors are concerned with maintenance of their goal commitments, as this allows them to move toward their desired future states without interruption. Given their preference for commitment maintenance, high locomotors should prefer goals with a higher attainment expectancy, because high expectancy signifies that they will most likely reach the desired state without problems. Locomotors should also invest more time and effort into their goals, as this increases their expectancy of goal attainment. Finally, high locomotors should complete tasks quickly and enjoy working on many goals at the same time, as this increases the speed with which they move toward their desired future states. These conjectures were explored in the studies considered in the following.

There is consistent evidence that locomotors prefer goals with high (vs. low) attainment expectancy. In one study, participants listed five attributes they wanted to attain (e.g., "being fit") and rated their expectancy of attaining each of those goals. High locomotors tended to select goals with higher attainment expectancy (i.e., goals that would be easier to achieve; Kruglanski et al., 2000). Locomotion is also positively correlated with optimism, or the increased expectancy of being able to attain one's goals (Kruglanski et al., 2000). These results are consistent with the idea that, because locomotors enjoy making progress toward their desired future states, they are most likely to select goals that allow them to make such progress without undue difficulties or delays.

In a similar vein, locomotors prefer means that serve a single goal (*unifinal* means) rather than means that serve multiple goals (*multifinal* means), because unifinal means offer a higher expectancy of goal attainment due to their perceived higher instrumentality (Zhang, Fishbach, & Kruglanski, 2007). In one experiment, participants read a paragraph that described either one advantage of consuming tomatoes (unifinal means condition) or two advantages of consuming tomatoes (multifinal means condition). When tomatoes were attached to one goal, locomotion was positively associated with the evaluation of tomatoes. When tomatoes were attached to two goals, however, locomotion was negatively associated with evaluations of tomatoes (Orehek, Mauro, Kruglanski, & van der Bles, 2012). In a second study, participants were asked to list either one goal or three goals that computers

can serve. A modified affect misattribution procedure (Payne, Cheng, Govorun, & Stewart, 2005) was subsequently used to assess participants' evaluations of computers. Locomotors' implicit evaluations of computers were higher when computers were associated with one goal (vs. three goals). Another study showed that high locomotors reported greater thirst when the linkage between drinking water and a single goal was disproportionately strengthened through priming (in the unifinal means condition), rather than when the linkage between drinking water and two goals was made equal (the multifinal means condition). In the last experiment in this series, participants were offered the use of a pen that served either one goal (writing) or two goals (writing and serving as a laser pointer). High locomotors were significantly more likely to select the unifinal (vs. the multifinal) pen (Orehek et al., 2012). Thus locomotors are willing to select options that serve a single goal if it means that their expectancy of attaining it will be greater as a result.

Locomotion is related to greater investment of time and effort in goal attainment, as investing more effort increases the expectancy that the goal will be accomplished successfully. Studies using employee samples have shown that workers high in locomotion invested more effort into task accomplishment (Pierro, Kruglanski, & Higgins, 2006). In another series of studies conducted in organizational settings, Bélanger and colleagues (2015) demonstrated that employees who were high in locomotion were more highly committed to their work and exhibited fewer withdrawal (from work) behaviors. For example, locomotion was negatively related to absenteeism and lateness, whether those were self-reported or measured via organizational records. Locomotors were also more involved in the tasks they pursued: Even though locomotors were more prone to exhibiting workaholic tendencies, their greater job involvement served as a protective factor from work-related stress. Specifically, due to greater involvement in their work, high locomotors experienced less work-related burnout and psychological strain (De Carlo et al., 2014). Taken together, these findings illustrate locomotors' greater commitment to maintaining motion toward their desired future states.

High locomotors tend to move quickly toward goal attainment. When engaged in a proofreading task that involved checking writing samples to make sure they were congruent with a master copy, high locomotors finished the task significantly faster than low locomotors (Kruglanski et al., 2000). Locomotion was also positively associated with measures of Type A personality, which is characterized by impatience and the desire to get things done quickly (Friedman & Rosenman, 1959; Kruglanski et al., 2000). High locomotors even prefer organizational structures that facilitate faster goal completion. For example, Kruglanski, Pierro, and Higgins (2007) showed that individuals with a stronger locomotion orientation prefer a more directive and forceful leader, presumably because a leader of this kind stimulates faster initiation of goal commitment and completion of goal pursuit (whereas a more considerate and deliberative leader may unnecessarily prolong the decision-making process). Thus high locomotors clearly do not wait to get things done but prefer to progress steadily toward their desired end states.

Locomotors enjoy making progress on several goals in quick succession; they therefore view multitasking as an attractive strategy, as multitasking involves rapidly switching back and forth between tasks (Han & Marois, 2013). In line with this finding, one experiment showed that high locomotors reported a greater preference for multitasking (Pierro, Giacomantonio, Pica, Kruglanski, & Higgins, 2013).

In another experiment, locomotors were more satisfied when they were given the opportunity to complete several tasks at the same time (as compared with being asked to work on each task separately; Pierro, Giacomantonio, et al., 2013). These studies suggest that locomotors are devoted to accomplishing as many goals as they can in any given time period.

In review, maintaining goal commitments allows an individual to move rapidly toward his or her desired future states. High locomotors are especially eager to experience such feelings of goal progress and goal-oriented motion. As a result, locomotors will make every effort to maintain their goals, including using strategies such as multitasking, choosing high-expectancy goals, and investing more time and energy into goal pursuit.

## **GENERAL DISCUSSION**

The studies described above demonstrate that locomotion regulatory mode can influence how individuals think about the future and pursue their goals. In fact, the locomotion orientation affects nearly every aspect of a person's thoughts and actions, from the types of attentional processes they evince to the extent to which they value different activities and outcomes. More specifically, locomotion has been shown to make individuals plan more for the future, focus less on the past, and be more likely to initiate and maintain future goal commitments. These findings can have both positive and negative implications for high locomotors and their interaction partners. They also offer myriad new directions for future research.

## **Practical Implications**

As can be seen from the wide variety of findings reviewed above, locomotion can often be highly beneficial. Nonetheless, the extant research on locomotion also suggests that there are many circumstances in which locomotion could actually lead to detrimental outcomes. As such, the fact that it is possible to situationally induce locomotion becomes critically important, as there are numerous tasks and environments in which it might be advantageous to either raise or lower individuals' locomotion levels. Previous situational manipulations of regulatory mode have attempted to put individuals into a locomotion mindset by having them think about times in the past when they acted like locomotors (e.g., when they finished one project and immediately got started on another; Avnet & Higgins, 2003). Other methods that have proven successful at inducing active goal pursuit are mental contrasting and implementation intentions (which, combined, are known as the MCII approach; Gollwitzer, 2014; Kappes, Wendt, Reinelt, & Oettingen, 2013; Kappes & Oettingen, 2014; Oettingen, 2012; Sevincer, Busatta, & Oettingen, 2014). These latter methods, too, have the potential to effectively induce a locomotion orientation because they simultaneously augment goal commitment and increase one's tendency to act toward a goal. Some situations in which such manipulations could be useful are discussed below.

Locomotors possess many characteristics that managers are likely to find appealing, such as the propensity for planning and organization, as well as intense engagement in tasks and reduced procrastination. Thus using locomotion as a criterion in

the recruitment process, as well as strategically inducing a high-locomotion mindset in employees when specific tasks require it, could be a wise strategy for organizational leaders. However, given that locomotors strongly emphasize the pace of their work, less measurable aspects of performance quality (e.g., creativity) may be traded in for more readily quantifiable aspects of their work (e.g., speed of task completion). More specifically, there can be a downside to locomotors' focus on expectancy and single-minded goal pursuit. For instance, generating creative ideas often requires the risky strategy of considering incidental information which—on the surface—may appear unrelated to the problem at hand. Indeed, broader attentional focus is known to be related to a more creative idea generation (Ward, Patterson, & Sifonis, 2004). Thus, if locomotors focus only on the most goal-relevant and easily accessible options and avoid exploring potentially risky paths, they may miss out on objectively superior routes to their goals. Therefore, it seems that the ideal employee should be high in locomotion *and* have other complementary qualities that will balance his or her level of locomotion (e.g., assessment; Chernikova et al., 2016; Lo Destro, Chernikova, Pierro, Kruglanski, & Higgins, 2015; Kruglanski et al., 2000). Regulatory mode manipulations have the potential to help employers attain this goal (cf. Avnet & Higgins, 2003).

Locomotors are less positive in their evaluations of past events and individuals who helped them to attain past goals. This tendency to downplay the past could have both positive and negative social consequences for locomotors. For example, lack of gratitude toward former helpers may be negatively perceived by others. Moreover, if locomotors' interaction partners recognize that they are valued as means to these individuals' goals, they may balk and withdraw from the relationship. Ultimately, this could undermine the quality of locomotors' social interactions; people who are struggling with such social issues may actually benefit from a *low*-locomotion induction. On the other hand, due to locomotors' greater inclination to forgive, they may have better relations with people who have wronged them in the past; as a result, individuals who are struggling to forgive others may profit from a *high*-locomotion induction. Interestingly, it is also possible that the combination of these two tendencies could lead to locomotors having less polarized attitudes toward other people on the basis of the past history of their relations. They may be more positive toward people who hurt them but also less positive toward people who helped them.

Another consequence of locomotors' reduced focus on the past could be a propensity to learn less from past experience. Research on deliberate practice has shown that acquisition of expertise in a given domain requires a thorough analysis of one's past experience (Ericsson, Krampe, & Tesch-Römer, 1993). The latter involves paying attention to feedback, which is needed to understand what one must do differently. If high locomotors are unlikely to focus on the past, they may consequently learn less from their past experience and perhaps be prone to repeating the same mistakes. Again, in such a situation, a *low*-locomotion induction would appear to be valuable.

There are many other domains, such as those of health, education, sports achievement, and others, in which high levels of locomotion can be either more or less advantageous, depending upon the situation and the structure of the task in question. Delineating the best way to manipulate locomotion, as well as the specific circumstances under which low (vs. high) locomotion might be the most useful, is a task for future research to undertake.

## **FUTURE RESEARCH DIRECTIONS**

Future research could examine additional consequences of locomotors' tendency to privilege the future over the past. For instance, given their inclination to avoid dwelling on the past, locomotors should be less susceptible to the endowment effect (Kahneman, Knetsch, & Thaler, 1991). That is, locomotors may counterintuitively value things they already own *less* than things they could potentially own in the future. Likewise, given their greater openness to change, locomotors may be less prone to biases that reflect greater attachment to the status quo, such as the mere existence bias (Eidelman, Crandall, & Pattershall, 2009) or the proneness toward loss aversion (Kahneman et al., 1991). In the political domain, locomotion should be negatively correlated with measures of conservatism, as conservatives are more attached to traditional social conditions and more averse to social change (Jost, Glaser, Kruglanski, & Sulloway, 2003). In the domain of health, high locomotors might actually prove to be in better physical health than their low-locomotor counterparts, due in part to their desire to move frequently and keep moving continuously (which should translate into increased physical activity) and in part to their tendency to forgive and forget past wrongs (which has been linked to better overall health; McCullough, 2000).

Given that locomotors plan more and feel greater control over their time, future research could investigate whether they are less prone to some planning biases and more accurate in time estimation concerning their completion of future tasks. Moreover, their time estimation errors, if any, should lie in the underestimation of the amount of time that they will need to complete a task. This assumes that the locomotors' motivation to move quickly through tasks would lead to the expectancy that they will be able to do so.

High (vs. low) locomotors are faster in goal pursuit, less prone to procrastination, more hard working, and more persistent in their goal striving; in short, they appear to be better at self-regulation. However, the mediating mechanisms driving those effects are not yet clear, and future research should attempt to illuminate them. For instance, future studies can examine the construal level (Trope & Liberman, 2011) at which locomotors naturally represent their goals. Given that locomotors enjoy goal attainment more, they may be more inclined to represent their long-term goals in terms of many small, concrete, and easily attainable subgoals. Such a strategy would multiply the experience of goal accomplishment, which is something that locomotors enjoy; at the same time, it would translate into better overall performance. In addition, the concept of goal attainment may have strong motivational value for locomotors. As a result, high locomotors may exhibit a steeper goal-gradient effect; that is, they may increase their effort expenditure as they get closer to their goals (Hull, 1932; Liberman & Förster, 2008).

It could also be of interest to investigate moderators of locomotors' apparent tendency toward determined goal persistence. For instance, a counterintuitive consequence of locomotors' emphasis on swift goal achievement could be quicker withdrawal from a goal if its attainment expectancy decreases. When obstacles interfere with locomotors' smooth progress toward goal attainment, they may be faster to abandon that objective and move on to a new goal that promises fewer impediments and delays.



## **SOME APPARENT CONTRADICTIONS**

The careful reader may have noticed two seeming contradictions in the research reviewed in this chapter. First, some studies have shown that locomotors enjoy multitasking because it involves rapidly switching back and forth between tasks (Pierro, Giacomantonio et al., 2013). But—in apparent contradiction to this—other research has come to the conclusion that locomotors prefer means that serve a single goal at one time to means that serve multiple goals at one time, because the former are perceived as more instrumental (Orehek et al., 2012). However, this inconsistency can be explained by paying close attention to the features of each task environment. When a multitasking situation involves switching back and forth between means in order to achieve multiple tasks (as in the Pierro, Giacomantonio, et al., 2013 study), it allows and encourages movement; as a result, locomotors should prefer to multitask in this environment. However, when a situation involves choosing between one means that either serves one or multiple goals (as in the Orehek et al., 2012, study), there is only a single means in both cases, and no task switching or movement between means is possible. In that situation, locomotors' focus is switched to the instrumentality of the means in question—which affords the smoothest, most certain movement.

A second potential contradiction lies in the existence of studies showing that locomotion is negatively associated with impulsivity and positively associated with self-control (Shalev & Sulkowski, 2009; Spinella, 2007; Struk et al., 2015), whereas other studies show that locomotion is also positively correlated with the tendency to prefer small, immediate rewards to large, delayed rewards (Guo & Feng, 2015). Nonetheless, much like the first one, this contradiction is only apparent. Although the inability to resist momentary rewards in order to attain long-term goals has been treated as a symptom of impulsive behavior (Tangney, Baumeister, & Boone, 2004), we argue that it is not the failure to adhere to long-term goals that drives this effect among locomotors. Rather, locomotors may choose smaller rewards because they care less about the overall value of their strivings and more about movement as such. As a result, when locomotors have the option to engage in action *right now* by choosing to receive something in the present as opposed to in the future, locomotors will jump on that chance and select the immediate option. Locomotors' greater self-control presumably resides in their resistance to distractions and temptations once they are moving toward a salient objective. So the apparent contradiction between the findings is accounted for by the fact that locomotors are wont to initiate movement as soon as possible and to maintain it without interruptions until the end is reached. Nevertheless, these conjectures are merely speculative; future experiments should be conducted in order to investigate the moderating variables that influence when locomotors will tend to exhibit self-control versus impulsivity.

## **CONCLUSION**

In summary, locomotion regulatory mode is an important determinant of individuals' orientation toward the future. A wide variety of research findings has demonstrated the impact of locomotion on future-oriented thinking, planning, goal



pursuit, and behavior. Nonetheless, many aspects of locomotors' preoccupation with the future remain unexplored and could be profitably investigated in future research.

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